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JOHN HUNTER.

In the history of the pursuit of knowledge under difficulties, John Hunter has very appropriately a place. He was a rare example of what industry and perseverance can accomplish—of success achieved comparatively late in life. He was not brought up to his profession; he entered it late. He began his education when the accomplished youth of our medical schools are finishing theirs; but he persevered, and won for himself an immortal name.

John Hunter, the youngest of ten children, was born in the beginning of the last century, at Long Calderwood, Lanark, Scotland.

taking thirty drops of laudanum. From school, having acquired but little information, Hunter removed to Glasgow, where he lived with his brother-in-law, a cabinet-maker. But his brother-in-law having failed, Hunter was again thrown upon the world. Fortunately his brother William had acquired some reputation in London as a teacher of anatomy. To him he wrote, requesting that he would allow him to come to London on a visit, making, at the same time, an offer to be his assistant in his anatomical researches, or, if that proposal should not be accepted, expressing a wish to go



PORTRAIT OF JOHN HUNTER.

His father was a small landed proprietor, and on his death, which happened when he was ten years old, John seems to have been left to do as he pleased. If ever a boy stood a fair chance of being ruined, it was he. He was sent to the grammar-school, but not having a turn for languages, and being spoilt by indulgence, he neglected his studies and spent the greater part of his time in country amusements. Afterwards he felt the consequences of this neglect acutely. Giving lectures was always particularly unpleasant to him. It was with the greatest difficulty that he could be persuaded to speak in public. He never delivered the first lecture of his course without

into the army. His brother sent him a kind invitation, and he reached London in September, 1748.

We are inclined to believe that the difference between a successful and an unsuccessful man in life is, that the one misses his opportunities while the other improves them. This was especially the case with Hunter. His brother, who was anxious to form some opinion of his talents for anatomy, gave him an arm to dissect for the muscles, with the necessary directions as to how it was to be done, and he found the performance such as greatly exceeded his expectation. Hunter was next employed in a dissection of a more difficult nature.

This was an arm in which all the arteries were injected, and these as well as the muscles were to be exposed and preserved. The way in which this was done gave his brother so much satisfaction, that he at once declared that his brother would become a good anatomist and that he should not want for employment. Henceforth Hunter laboured at anatomy unremittingly. In the summer of 1749 Mr. Cheselden, at the request of his brother, Dr. Hunter, permitted him to attend at Chelsea Hospital, and there he learnt the elements of surgery. The following winter he was so far advanced as to assist his brother by teaching dissection to his pupils. In the summer of 1750 Mr. Hunter again attended the hospital at Chelsea. In 1751 he became a pupil at St. Bartholomew's. The following summer he went to Scotland, and brought up his sister Dorothea; and in 1753 entered as a gentleman commoner at St. Mary's Hall, Oxford. In 1754 he became a surgeon's pupil at St. George's Hospital, where he continued during the summer months; and in 1756 was appointed house surgeon. He had previously become a partner with his brother in lecturing. All this time he worked unremittingly at anatomy. With the view better to understand the human structure, he extended his researches amongst the inferior animals, and laid the foundation of his collection in comparative anatomy. So eagerly did he attach himself to this pursuit, that he sought by every means in his power the opportunity of prosecuting it with advantage. He applied to the keeper of wild beasts in the Tower for the bodies of those which died there, and he made similar applications to the keepers of travelling menageries. He purchased all rare animals that came in his way, and these, with such others as were presented to him by his friends, he entrusted to the showmen to keep till they died, the better to encourage them to assist in his labours. His fondness for animals made him keep several of different kinds in his house, which, by attention, he made familiar with him. Occasionally, however, this familiarity was attended with danger, as in the following instance related by his biographer, Sir Everard Home:—"Two leopards, which were kept chained in an outhouse, had broken from their confinement and got into the yard among some dogs, which they immediately attacked. The howling thus produced alarmed the whole neighbourhood. Mr. Hunter ran into the yard to see what was the matter, and found one of them getting up the wall to make his escape, and the other surrounded by dogs. He immediately laid hold of them both and carried them back to their den; but as soon as they were secured, and he had time to reflect upon the risk of his own situation, he was so much agitated that he was in danger of fainting."

In 1760, Hunter's health was so much impaired by excessive attention to his pursuits, that he was advised to go abroad, consumptive symptoms having made their appearance. In October of that year, Mr. Adair, Inspector-general of Hospitals, appointed him a surgeon on the staff, and, in the following spring, he went with the army to Belleisle. Hunter served, while the war continued, as senior surgeon on the staff, both in Belleisle and Portugal, till the year 1763; and in that period acquired a knowledge of gun-shot wounds, on which he wrote a treatise, published after his death. On his return to England, he settled in London, where, not finding the emoluments from his half-pay and private practice sufficient to support him, he taught practical anatomy and operative surgery for many years. In the first eleven years of his practice, from 1763 to 1774, his income never exceeded a thousand pounds a year. But it gradually improved. In 1778 it exceeded that sum; and for several years before his death it was five thousand a year—the year before his death it was more. No sooner had Hunter come back to England, than he returned, with unabated ardour, to the study of comparative anatomy; and, as his experiments could not be carried on in a large town, he purchased for that purpose a piece of ground near Brompton, at a place called Earl's Court, on which he built a house. We have already related an anecdote connected with this retreat. His collection of birds and animals here was very extensive; but his familiar study of them and their habits was not, as we have already seen, always unaccompanied with danger. The fiercer animals were those to which he was most partial; and he had several of the bull kind from different parts of the world. Among these was a beautiful small bull he had received from the queen, with which he used to wrestle in play and entertain himself with its exertions in its own defence. In one of

these contests the bull overpowered him and threw him down; and had not one of the servants accidentally come by and frightened the animal away, this frolic would, most probably, have cost him his life.

In 1767, Hunter was chosen a Fellow of the Royal Society. His desire for improvement in those branches of knowledge which might assist him in his researches, led him at this time to propose to Dr. George Fordyce, and Mr. Cuming, an eminent mechanic, that they should adjourn from the meetings of the Royal Society to some coffee-house, and discuss such subjects as were connected with science. This society comprised several eminent men, such as Sir Joseph Banks, Dr. Solander, Dr. Maskelyne, Mr. Watts of Birmingham, and others. In 1768, Hunter became a member of the College of Surgeons; and, in the year following, was elected one of the surgeons of St. George's Hospital. In 1771, his treatise on "The Natural History of the Teeth" was published; and in July of the same year he was married to Miss Home. The expense of his pursuits had been so great, that it was not till several years after his first engagement with this lady that his affairs could be sufficiently arranged to admit of his marrying. In a short time his private character and professional reputation advanced rapidly. His family also began to increase; but still as much time and more money than ever were devoted to his collection. The whole suite of the best rooms in his house were occupied by his preparations, and he dedicated his mornings, from sunrise to eight, entirely to his favourite pursuits. In the winter of 1773 he formed a plan of giving a course of lectures on the theory and principles of surgery, with a view of laying before the public his own opinions on that subject. In the winter he read his lectures gratis to the pupils of St. George's Hospital, and in 1775 gave a course for money, upon the same terms as the other professors. In 1776, Hunter was appointed surgeon-extraordinary to his Majesty. Other honours were heaped upon him. Learned societies at Edinburgh, Gottenburg, Paris, and America, enrolled him amongst their members; and in 1792 he was appointed surgeon-general to the army; he had previously been deputy. And then came the end. Hunter died of angina pectoris, in the 65th year of his age, on October 16th, 1793. When in his usual state of health, he went to St. George's Hospital, and meeting with some things which irritated his mind, he went into the next room; turning round to one of the physicians of the hospital, he gave a deep groan and dropped down dead. He was buried in the parish church of St. Martin's-in-the-Fields.

Hunter was of a short stature, uncommonly strong and active, and capable of great bodily exertion. His countenance was animated and open, and in the latter part of his life deeply impressed with thoughtfulness. When his portrait was shown to Lavater, he said, "That man thinks for himself." In his youth, writes Sir Everard Home, he was cheerful in his disposition, and entered into youthful follies with others of the same age; but wine never agreed with his stomach, and for the last twenty years of his life he drank nothing but water. His temper was warm and impatient. His disposition was candid and free from reserve. His mind was perpetually on the alert. He used to say it fatigued him to be long in a mixed company, which did not admit of connected conversation, more particularly during the last ten years of his life. He required less relaxation than most other men, seldom sleeping more than four hours in the night, though almost an hour after dinner.

In his writings Hunter displays extraordinary powers. One of his most important papers was that on the muscularity of arteries, but his grand discovery was that of the life of the blood. More than of most men is it true of Hunter, that his works yet live. His collection of comparative anatomy was purchased by the English parliament for £15,000. This collection must be considered as the great object of Hunter's life, and as a surprising proof of his talents, assiduity, and labour. It is an attempt to expose to view the gradations of nature, from the most simple state in which life is found to exist, up to the most perfect and most complex of the animal creation—man himself. Hunter, by means of preparations, was enabled to preserve the parts of different animal bodies intended for similar uses, so that the various links in the chain are readily followed and clearly understood. This collection is arranged according to the subjects they are intended to illustrate,

which are placed in the following order:—first, parts constituted for motion; secondly, parts essential to animals respecting their own internal economy; thirdly, parts superadded for parts connected with external objects; and fourthly, parts for the propagation of the species and maintenance or support of the young.

Hunter's museum was offered to the College of Physicians, which declined the trust. It was then committed to the care of the College of Surgeons, Lincoln's-inn-fields, London, where it is open to the inspection of the public during the afternoons of Monday, Wednesday, and Friday. The corporation has enlarged the museum, instituted professorships for the illustration of it, and is now forming a library. The most valuable part of the collection is that in the area of the great room, consisting of upwards of 2,000 preparations, which were the result of Mr. Hunter's experiments on the inferior animals, and of his researches in morbid human anatomy. All these originally were arranged as illustrative of his lectures. The first division alone, in support of his theory of inflammation, contains 602 preparations. Those, illustrative of specific diseases, amount to 1,084. There are besides, 652 dried specimens, consisting of diseased joints, bones, and arteries. On the floor there is a very fine collection of the skeletons of man and other animals; "and if the council of the college," says the writer of the life of Hunter, in the Gallery of Portraits, "continue to augment this collection with the same liberal spirit which they have hitherto shown, it will be creditable to the nation." The osteological specimens amount to 1,936. But the most interesting portion—we might say, one of the most interesting exhibitions in Europe to a philosophical and inquiring mind—is that which extends along the whole gallery: there the glory of his system shines. Let us take one small compartment in order to understand it. "Suppose," says the writer we have already quoted, "it is wished to learn the importance of the stomach in the animal economy. The first object presented to us is a hyatid, an animal, as it were, all stomach—

being a simple sac with an exterior absorbing surface. Here we have the polypus, with a stomach opening by one orifice, and no superadded organ. Next in order is the leech, in which we see the beginning of a complexity of structure. Then advancing to creatures in which the stomach is complex, we find the single membranous stomach; then the stomach with a crop attached to macerate and prepare the food for digestion; then a ruminating stomach; and finally, all the appended organs necessary in the various classes of animals." When Hunter died, the museum consisted of 70,000 preparations, and was said to have cost him £10,000. Hunter began the catalogue several years before his death. He bequeathed to the world nineteen folio volumes of MS. materials, written either by himself or at his dictation, and, there is little doubt, of the most valuable kind. More MSS. were burnt by his brother-in-law, Sir E. Home, for no other apparent reason than that Sir Everard feared his own plagiarisms from Hunter's MSS. would be discovered. Thus an irreparable injury has been done to Hunter's fame. "Every year," writes one, "as his museum is more closely studied, proves that Hunter had been well aware of facts, for the discovery of which other observers have since his death received the honour." Happily, however, Hunter's fame has survived even so scandalous an act. Every year there is a grand day at Lincoln's-inn-fields. Warriors and statesmen—poets and artists—men of celebrity in every walk of life, are found among the audience. The president is the orator. Referring to the fitness of the day for the subject—the 14th of February, and the birthday of John Hunter—he proceeds, in a notice of his life, to show what the college and the profession and the world owe to this illustrious man. Surely no more fitting place could be found for such a theme. Under the bust of Wren, in St. Paul's, we read, "*Si monumentum requiris circumspice*." Under the portrait of Hunter in Lincoln's-inn-fields the same might be written. Everything around speaks of Hunter's talent, energy, and power.

ROMAN MONUMENTS AT TURBIA.

TURBIA is one of the principal points of interest in the doubtful and disputed territory between Nice and Monaco. On leaving the village we begin to descend; Monaco lies directly below, and looking upon it from the terrace of Turbia, we feel almost inclined to take a leap downwards; but it would be a dangerous thing to do, for the perpendicular height is more than 1,500 feet. The path is cut like a staircase in this awful declivity, and if this is the ancient way, as it appears to be, modern progress has judged well; for, commencing at the same point as this frightful break-neck path, there is a fine post-road, running parallel with the coast, and descending so gradually towards Italy, that it only reaches the plain at the distance of three leagues. As at the extremity of the mountain, below which Nice is situated, the eye hovers over France, so here Italy, with its gulfs, its windings, its hills, and its mountains, lies spread out before us. When the atmosphere is sufficiently clear, we may distinguish Corsica, and the jagged peaks of the Apennines beyond Genoa, stretched out afar upon the horizon. Most striking is this glorious spectacle: it seems evident that we here pass from one country to another.

Tradition would make it appear that it was upon the very soil of Turbia that Augustus vanquished the people of the Alps, and, in fact, the possession of this decisive spot seems worthy of dispute. But we imagine, that even had not Turbia been the theatre of war, its towering position, which rendered it visible from the coast of France as well as from the coast of Italy, would have sufficed to determine the conquerors to erect there the trophy of their victory. We know very little of this war of the Alps, which nevertheless had such important results, since it confirmed the Roman dominion in these countries. Historians are singularly laconic on the subject. Suetonius, in his "Life of Augustus," merely says: "He subjugated the Alpine nations." Appian says: "He subdued by force all the barbarous and warlike nations which inhabit the summits of the Alps." We find that this war was concluded in the year of Rome 739, or B.C. 14. Several witnesses show that Augustus was assisted by Drusus, Tiberius, and Varro. It may be conceived that

a war which involved all the population of the mountains, from the Adriatic to the Durance, would be very uncertain, and require several campaigns. The war itself was a natural consequence of the extension of the empire by the conquests of Julius Cæsar. Rome could no longer tolerate independent nations between the two Gauls, nor that this communication should be long exposed to the turbulence of the mountaineers. It is astonishing that, having been mistress of Provence so long, she should have delayed until now to reduce Liguria to obedience. Perhaps, with its traditions of patience and perseverance, the senate had judged it wise to attend first to the most important. This is the opinion of Appian. "I think," said he, "that the state is anxious first of all to secure to Rome the right of passage through the Alps."

However that may be, we learn from Dion, that in order to preserve to posterity the memory of this great event, the senate commanded the erection of a monument upon the summit of the Alps; and Pliny has preserved to us the inscription in full which was placed upon it. This monument is the tower of Turbia. Too much injured by the barbarians to claim any interest as a specimen of art, it is, nevertheless, interesting to study. Who could gaze upon these crumbling stones—the infinite sea stretching out before him, the horizon of France on one side, and on the other that of Italy—and feel no interest in reflecting on the vicissitudes of the past, which predict so many for the future?

The monument has undergone such metamorphoses, not only from the hand of destruction, but also from change of use, that it is difficult to form an accurate idea, from its present condition, of what it must have been originally. It now consists of an enormous mass, which appears to have been formerly a quadrangle: it is surmounted by a tower which has been cut through the centre, and only one half left standing. It is only in the lower structure that the hand of the primitive architect is to be discovered: not only the construction of the tower, but the embrasures which crown the summit, indicate it a work of the middle ages. We have, in fact, the witness of historians to prove that the monument upon which